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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,577	10/04/2001	Toshiyuki Sashihara	P/2291-106	1209

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EXAMINER

NG, CHRISTINE Y

ART UNIT PAPER NUMBER

2663

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/970,577	SASHIHARA, TOSHIYUKI	
	Examiner	Art Unit	
	Christine Ng	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,11,22-25 and 28 is/are rejected.
- 7) ☒ Claim(s) 5-10,12-21,26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3, 4, 11 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3 lines 19-23 and claim 4 lines 21-25, the claims state that the base station receives "one of the interference notification signal and an error packet", so only one of the interference notification signal or the error packet is received. In the case that the interference notification signal is received and not the error packet, it is unclear how the base station can determine "that the channel is not available when at least a predetermined number of error packets have been received on the channel".

In claim 11 lines 18-23, the claim states that the base station receives "one of the interference notification signal and an error packet", so only one of the interference notification signal or the error packet is received. In the case that the interference notification signal is received and not the error packet, it is unclear how the base station can determine "that the channel is not available when an error packet reception pattern matches the predetermined notification signal transmission pattern".

In claim 22 lines 15-18, it is unclear how the mobile station can receive "one of the interference notification signal and an error packet as a response to the interference

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check signal at a receiving slot on the channel", since the mobile station is the one sending the interference notification signal to the base station.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 22-25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,470,006 to Mouldsley in view of U.S. Patent No. 6,693,885 to Sydon et al.

Referring to claim 1, Mouldsley et al disclose a method for avoiding asynchronous interference in a TDMA (time division multiple access) system allowing communications among a plurality of base stations (Figure 1, base stations 12,14,22) and mobile stations, comprising the steps of:

At a base station desirous of using a channel to transmit and receive signals,

a) Transmitting a first predetermined signal at a slot corresponding to each of transmission and reception timings on the channel to check whether asynchronous interference occurs on the channel. The base station sends a signal to a mobile station, and the mobile station performs interference measurements based on the signal. Refer to Column 3, line 66 to Column 4, line 5; and Column 4, lines 49-67.

At a mobile station located in an area where the first predetermined signal can propagate,

b) Determining whether asynchronous interference occurs on the channel, based on a plurality of error packet reception results on the channel. Using the signal from the base station, the mobile station counts the number of corrupted bits at the beginning and end of the time slot to perform interference measurements. Refer to Column 4, lines 49-67.

c) When it is determined that asynchronous interference occurs, notifying the base station of occurrence of the asynchronous interference. Refer to Column 5, lines 1-12.

At the base station,

d) When the base station is successfully notified of occurrence of the asynchronous interference, determining that asynchronous interference occurs. Refer to Column 5, lines 1-17.

e) If one of an interference notification (interference information) and an error packet (none) are received in response to the first predetermined signal, determining that asynchronous interference occurs. Since the claim only requires one of an interference notification or an error packet, Mousley discloses that the mobile station sends to the base station interference information about the interference levels. Refer to Column 5, lines 1-17.

f) When it is determined that asynchronous interference occurs on the *time slot*, selecting another *time slot* to avoid asynchronous interference. Refer to Column 5, lines 18-40.

Moulsley does not disclose selecting another *channel* to avoid asynchronous interference.

Sydon et al disclose that during data communication, the channel must be continuously monitored. If monitoring shows that the current channel transmitted at a particular frequency is subject to interference, another frequency is chosen for the next active time slot. Refer to Column 2, lines 34-44 and Column 5, lines 45-57. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include selecting another *channel* to avoid asynchronous interference; the motivation being that in case all time slots of a channel are already occupied, a time slot on another frequency can be chosen for data transmission/reception, thereby preventing collision.

Referring to claim 3, refer to the rejection of claim 1. Furthermore, Moulsley discloses that:

In step a), the interference check signal is transmitted a predetermined number (one) of times. The base station sends one signal to the mobile station, and the mobile station performs interference measurements based on the signal. The signal is sent once during each time slot that information is sent. Refer to Column 4, lines 49-61.

In step b), it is determined that asynchronous interference occurs on the channel when at least a predetermined number of error packets (number of corrupted bits) are included in the plurality of reception results (measurement of interference across time slot). "The number of corrupted bits provides an indication of the level of interference at the beginning and at the end of the time slot". Refer to Column 4, lines 49-61.

In step d), it is determined that the channel is not available when at least a predetermined (one) number of error packets have been received on the channel. The mobile station one packet of interference information back to the base station, the interference information. The packet of information includes estimates of the interference levels or an explicit request for timing adjustment. Refer to Column 5, lines 1-17.

Referring to claims 22 and 25, refer to the rejection of claim 1 and claim 3.

Referring to claim 23, Mousley discloses that the last packet reception result indicates one of error status and normal status. "The number of corrupted bits provides an indication of the level of interference at the beginning and at the end of the time slot". Refer to Column 4, lines 49-61.

Referring to claim 24, Mousley discloses that the last packet reception result of a received packet indicates the error status in one of the cases where no unique word is detected (none), a CRC error is detected (Column 4, lines 50-53), and data of the received packet is not interpretable (none).

Referring to claim 28, Mousley does not disclose that an ad hoc network is constructed by one of the mobile stations and temporarily acting as a base station.

However, an ad hoc network allows for wireless devices to be temporarily connected to one another depending on their location. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that an ad hoc network is constructed by one of the mobile stations and temporarily acting as a base station, the motivation being to allow for flexibility in the system as the

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mobile stations change locations.

Allowable Subject Matter


5. Claims 5-10, 12-21, 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng 
January 11, 2006


RICKY Q. NGO
ASSISTANT PATENT EXAMINER